SECTION 1

PROPOSED PROJECT

1.1 INTRODUCTION

Proposed Project Area

The study area includes Georgetown Charter Township in eastern Ottawa County and the city of Grandville in western Kent County (See Exhibit 1.1 - Study Area Map***).*** The project area is located along I-196 between M-11 in Kent County, the I-196/Chicago Drive (old M-21) interchange, and the Baldwin Street/Main Street intersection in Ottawa County (See Exhibit 1.2 - Project Location Map***).*** This area is primarily a residential suburb in the western part of the Grand Rapids metropolitan area. Commuters primarily travel between the study area and Grand Rapids for employment and retail activities. The I-196/Chicago Drive interchange is a primary route used for travel between these areas**.**

Project History and Previous Improvements

The I-196/Chicago Drive interchange was constructed in the 1970s as part of the I-196 freeway extension west from Grand Rapids to Holland. I-196 connects to I-94 near Benton Harbor and serves as the primary route from Grand Rapids to Chicago. Over the past 15 years the Michigan Department of Transportation (MDOT) and local agencies have implemented various improvements on existing state highways and local roads to alleviate the traffic issues associated with the interchange area and local access to the I-196 freeway (See Table 1.1 - Previous Road Improvements). MDOT has addressed some of the previous traffic concerns related to congestion within the study area with low-capital improvements. However, more wide-ranging improvements are necessary to ease current congestion in the I-196/Chicago Drive interchange vicinity.

In 1998, the MDOT began the Interchange Access Justification Report (IAJR) process to determine the feasibility of this proposed project and its impact on I-196 freeway traffic operations (Available upon request). The conceptual alternative identified in the IAJR included a new westbound off-ramp and a new eastbound on-ramp connecting a proposed extension of Baldwin Street to I-196. The IAJR was completed and approved by the Federal Highway Administration (FHWA) in 2000, contingent upon completion of the National Environmental Policy Act (NEPA) clearance process.

TABLE 1.1 - PREVIOUS ROAD IMPROVEMENTS

Roadway	Description of Improvements
44th Street	Extended roadway west from Kenowa Avenue into Ottawa County to provide alternate routing to I-196 from Chicago Drive. (1986)
Southbound Main Street	Added dual southbound to eastbound left turn lanes at Chicago Drive. (1981)
Cottonwood Drive	Extended Cottonwood Drive through Chicago Drive and connected with Kenowa Avenue, to provide improved access to the commercial area and local roads south of Chicago Drive. (1997)
Chicago Drive	Added exclusive westbound right turn lanes at Main Street intersection; Constructed turning movement changes and dual indirect left turn lane improvements at Cottonwood Drive to improve traffic operation. (1986)
Westbound I-196/ Chicago Drive Off Ramp	Lengthened ramp, with dual turn-lanes, to provide additional vehicle storage capacity. (1998)
Westbound I-196	Constructed an additional weave/merge lane between the M-11 (28th Street) and westbound Chicago Drive off ramp. (1998)
M-6 South Beltline (Paul B. Henry Freeway)	Construction of new freeway (2005); this freeway has altered travel patterns in the greater Grand Rapids area, but has little effect on the I-196/Chicago Drive ramp movements and related travel patterns. (2004)

1.2 PURPOSE AND NEED FOR THE PROPOSED PROJECT

Purpose of the Proposed Project

The purpose of this proposed project is to enhance mobility along I-196 for traffic traveling between the Eastern Ottawa County and the Grand Rapids metropolitan area. This will be accomplished by developing a safe and efficient transportation improvement which addresses traffic safety, operational concerns, and access issues. The proposed project will assure the I-196 freeway, the I-196/Chicago Drive interchange area, and the connecting surface roads will meet current and future travel demands in the study area. Specific objectives of the proposed project include the following:

- Improve access between the Georgetown Charter Township (Jenison) area and the Grand Rapids metropolitan area.
- Relieve congestion, enhance traffic operations, and improve safety on the I-196 freeway, the I-196/Chicago Drive interchange, and the connecting surface road system.
- Reduce travel restrictions caused by the Main Street at-grade (CSX) railroad crossing and the geographic limitations within the study area.
- Improve EMS access to and from the Study Area.
- Enhance mobility within the study area, while minimizing negative natural environment, cultural, economic, and social impacts.

Need for the Proposed Project

Population growth and travel patterns have resulted in increased traffic congestion on county roads and state highways in the study area. This traffic growth and congestion has reached the point where it now impacts the interstate highway system operations as noted in the IAJR. The I-196 at Chicago Drive interchange, in its current configuration, is the primary freeway access point for the Jenison area. Do in part to the proximity of the Grand River, most traffic from the Georgetown Township area is funneled to this interchange point, from Baldwin Street, Main Street, and Chicago Drive. This funnel effect is complicated by an at-grade railroad crossing of the CSX Railroad at Main Street. Factors directly affecting the need for the proposed project include, but are not limited to:

- Employment and population growth in the Jenison area has led to increased traffic congestion and travel delays.
- The location of the Grand River, in conjunction with the funneling effect of the local road system to Chicago Drive, has created a single point of access to I-196 for the Jenison area.
- Traffic operations, congestion, and safety issues in the project area include: intersection congestion, difficult merge/weave conditions, accidents, and I-196 mainline off-ramp backups.
- The CSX railroad operates an at-grade crossing at Main Street averaging 25-30 trains per day. These trains cause traffic backups onto Chicago Drive, the westbound off-ramp, and the I-196 mainline. Furthermore, traffic backups occur along southbound Main Street to Baldwin Street, and Cottonwood Drive.

- Emergency Medical Service (EMS) vehicles have increased response times and access disruptions caused by CSX train operations and the resulting congestion of the local road system.

Existing Conditions

Several freeway and surface road operational problems exist in the study area (See Exhibit 1.3 - Traffic Flow Conditions). The I-196/Chicago Drive interchange encounters the majority of its morning peak-hour commuter traffic heading eastbound to Grand Rapids, while the evening peak-hour traffic is heaviest on the westbound return trip. I-196 is also used as a local connector between M-11 in Grandville and Chicago Drive in Jenison. The local traffic adds to I-196 traffic volumes and creates difficult merge/weave conditions on the freeway.

Surface street congestion and delays cause traffic to back-up onto the I-196 interchange and freeway mainline, resulting in traffic flow problems. During peak hours, the following five intersections and segments experience traffic flow and congestion problems related to the access and congestion issues identified in the Purpose and Need:

- Chicago Drive at Main Street, and at CSX Railroad crossing
- Baldwin Street at Cottonwood Drive
- Eastbound I-196 off-ramp to westbound Chicago Drive
- I-196 mainline, east and west bound between the Chicago Drive and M-11 interchange ramps
- Westbound I-196 ramp to westbound Chicago Drive (especially during railroad operations blocking the Main Street crossing)

Additional traffic analysis detail, as well as updated Interchange Access Justification Report (IAJR) traffic data, is included in Appendix B. The I-196 at Chicago Drive (Baldwin Street) Traffic Analysis Technical Report is available upon request.

Traffic and Geometrics

Geometric inefficiencies and traffic issues include the following:

- The I-196/Chicago Drive westbound off-ramp merge/weave conflicts on the freeway, off-ramp, and Chicago Drive;
- Southbound Main Street left-turn traffic crossing Chicago Drive traffic to eastbound (right-turn) I-196 on-ramp;
- And I-196 eastbound on-ramp from Chicago Drive merge/weave conflicts with traffic preparing to exit at M-11 (28^{th} Street).

These three traffic conditions result in hazardous merge/weave conditions, and related crashes. Traffic operations in these areas become more difficult during peak-hour travel times due to increased traffic volume, and when trains are blocking the Main Street crossing.

The I-196 at Chicago Drive (Baldwin Street) Traffic and Geometrics Technical Report includes additional traffic and capacity information and is available upon request.

Railroad Operation Impacts

The at-grade CSX railroad crossing on Main Street causes two operational problems. When trains cross Main Street, traffic backups occur along Chicago Drive, onto the westbound off-ramp, and the I-196 mainline. Furthermore, traffic backups occur on southbound Main Street, eastbound Baldwin Street, and southbound Cottonwood Drive. The intermittent nature of delays from train operations is difficult to measure and model accurately to illustrate their impact on the local transportation system. Train movement occurs approximately 25-30 times per day on average, including freight trains and AMTRAK passenger service. The observed duration can exceed 3 minutes for train crossings, with additional time required (of 6 minutes or more) for surface roads and freeway traffic to clear. Over 100 cars have been observed backed up from train operations along eastbound Baldwin Street/Main Street in the AM peak-hours, with similar backups on westbound Main Street and Chicago Drive during the PM peak -hours. When combined with average travel delays, the impact of railroad operations is substantial, especially during peak-hour travel times.

Emergency Medical Service (EMS) Delays

The CSX railroad crossing at Main Street separates major segments of the Georgetown Township population from hospitals and major health care facilities in the Grand Rapids metropolitan area. All area hospitals are located east and/or north of the interchange area, requiring EMS vehicles to go through this congested area and at-grade railroad crossings, with limited alternate routes. Substantial EMS service disruptions and reduced response times result from travel delays, and CSX train operations which block surface roads in the study area. Cases have been documented where patients have been transferred between EMS vehicles through stopped railroad cars blocking several intersections along Chicago Drive.

General Crash Data

The IAJR, indicated that over a four year period there were 134 rear-end crashes on the I-196 westbound off-ramp to Chicago Drive, with 66 percent of those crashes occurring during peak-hours. In addition, 74 side-swipe crashes can be attributed in part to eastbound and westbound merging traffic under congested conditions, which is complicated by traffic entering and exiting the I-196 freeway at M-11. This clearly shows the effect that slowed and/or stopped traffic on the surface road system has on the westbound off-ramp, and the westbound and eastbound interstate freeway mainline operations. Adding the new ramps and the eastbound weave/merge lane between Chicago Drive and M-11 will relieve the congested conditions, and address rear-end and side-swipe crashes.

Multi-Modal Issues

The study area is served by an Intermodal Transit Partnership (ITP) line-haul transit route in Grandville and a demand-response small bus transit service in Georgetown Charter Township

(provided by Georgetown Seniors). Amtrak rail passenger service passes through the study area with no stops at this time. Transit service will be maintained during construction.

The city of Grandville has developed a non-motorized trail along the Grand River which terminates at the Wastewater Treatment plant, adjacent to the segment of I-196 targeted for access improvement. MDOT has been coordinating preliminary highway improvement plans with the city of Grandville to ensure both facilities can be accommodated within the study area.

New sidewalks will be constructed along the north side of Baldwin Street, terminating at the treatment plant service drive per Georgetown Township request. The existing sidewalk on the south side of Baldwin Street, adjacent to the church at Main Street, will be replaced based on discussions with township and church officials.

The non-motorized trail in Grandville will be connected to a trailhead parking area on the east side of the entrance to the wastewater treatment facility. Access to this parking area will be provided by the new service drive into the wastewater treatment plant. This service drive will also include the reconfiguration and improvement of the existing trail-head parking area, as part of this project. Access for future trail construction by the city of Grandville will be accommodated at the replaced I-196 bridges over Buck Creek and connect to the local city trail system, pending completion of future Grandville trail plans beyond this area. Actual trail construction is beyond the scope of this project and will be a local responsibility.

Population and Employment Growth

The city of Grandville and Georgetown Township have experienced rapid population growth over the past 20 years, and it is expected to continue its growth in the future. Between 1980 and 2000, the Grandville/Georgetown area grew from approximately 39,000 to 58,000 (49 percent increase). The MPO population projections for the 2030 Long Range Transportation Plan (LRTP) show the population growing by another 21 percent between 2000 and 2030. Employment in the Grandville/Georgetown area is also projected to grow from 33,000 to 39,000 (18 percent increase) between 2000 and 2030. Much of this growth will be north of and traveling through the project area toward metro area employment centers. Without transportation system improvements, this projected population and employment growth will add to the existing traffic congestion, safety, and access issues in the I-196/Chicago Drive (Baldwin Street) interchange area.

1.3 ALTERNATIVES CONSIDERED AND DISMISSED

No Build: The No-Build Alternative was developed for comparison with the build alternatives, described later in this section. This scenario includes no future improvements to the transportation system inside the study area, other than previous projects such as the M-6 Freeway and widening Baldwin Street west of Cottonwood Drive, or minor changes in signal timing, etc. Current traffic operational and safety issues, freeway access problems, EMS restrictions caused by the CSX railroad crossing, travel delays, and mobility limitations will continue and worsen as growth continues in the area. The Bo-Build scenario will not improve the travel conditions and

does not meet the project Purpose and Need (See Table 1.2 -Comparison of Alternatives to Purpose and Need).

Transportation System Management (TSM): This alternative includes minor operational improvements on the existing transportation system, such as adding turning lanes or changing signal timing. As indicated in this document, many TSM improvements have been implemented over the past 10-15 years; however, as growth in the area continued, the value of these improvements will diminish. Additional TSM projects will not address issues identified in the EA, such as improved access to I-196, travel and EMS service disruptions caused by the CSX railroad crossing, and resulting mobility limitations. This alternative does not address the Purpose and Need for the project.

White Street Extension: This alternative involves extending Baldwin Street in Georgetown Township to connect with White Street in Grandville to provide a surface street route north of the CSX railroad crossing, and connecting to I-196 at the M-11 interchange. This alternative would divert traffic destined for I-196 onto city streets in Grandville. This will cause traffic Congestion and delays at the M-11 (28th) Street)/Wilson Avenue/I-196 interchange area, congestion on city streets, and would have more property impacts. It also has substantial opposition from the local communities affected. Another variation of the alternative would be to provide a service drive along the freeway mainline, with similar impacts and results. This alternative does not address the Purpose and Need for the project.

New Grand River Crossing: This alternative would develop a new route and river crossing, north of the Baldwin Street corridor, connecting Cottonwood Drive and Wilson Ave (M-11), along the Taylor /Burton streets alignment. This new route would provide additional mobility for Georgetown Township, but would not address the traffic operational and freeway access issues in the Baldwin Street area. It would direct additional traffic to county roads, city streets and surface trunklines (M-11), which will then require additional improvements. It has substantially more environmental and social impact, as well as property impacts than the preferred alternative, and does not meet the Purpose and Need for the project.

Railroad Grade Separation at Critical Surface Roads: Potential railroad grade separation locations were examined along the Chicago Drive (old M-21) corridor. However, the water-table and proximity of the CSX rail-line to Chicago Drive make this option not feasible. Any elevated grade separation would require crossing both the railroad and Chicago Drive which would result in loss of direct access from the side streets to Chicago Drive. A below-grade crossing would have similar issues and have impacts on the groundwater and wet-lands along Chicago Dr. In addition, direct access to I-196 would not be improved. This alternative does not address the Purpose and Need for the project.

Left On EB I-196 Mainline from EB On-Ramp: This alternative involves accessing the EB I-196 freeway mainline from the left or median side. This option would have somewhat less construction impacts, but would result in traffic entering the freeway from the left side. Although this type of operation has been used before, it poses several operational and safety issues. The left-hand on is not a common operation and therefore is not expected by the driver. Slower vehicles entering the freeway from the ramp have the potential for a greater speed

differential with the traffic they are trying to merge with in the "fast" lane. This results in a higher potential for accidents or congestion. This condition is further compounded by the proximity of the left-hand on ramp to the existing right-hand on ramp from Chicago Drive. Traffic in the right hand "slow" lane will often weave into the left-hand "fast" lane to allow ramp traffic from Chicago Drive to merge onto the expressway. The placement of a left-hand on ramp in close proximity to the existing right-hand on ramp increases the potential for accidents and congestion. Due to these reasons this alternative was dismissed.

3-Lane on Baldwin Street: This alternative would involve less widening and fewer construction impacts along Baldwin Street than 5-lanes. However, it would not address the anticipated traffic on Baldwin Street accessing the new interchange ramps, and would not provide for deceleration and acceleration space from local traffic along Baldwin Street. Efforts were made to minimize impacts from the preferred 5-lane cross-section and to provide pedestrian access along the corridor; therefore, this option was dismissed.

TABLE 1.2 – COMPARISON OF ALTERNATIVES FOR PURPOSE AND NEED

	Improve access between Georgetown Twp and Grand Rapids	Relieve Traffic Congestion & Reduce delays	Improve Safety & enhance traffic operations	Reduce restrictions caused by CSX RR	Improve EMS access	Minimize Environmtl Impacts
No-Build	○	○	○	○	○	◉
Preferred Alt 5 lane Baldwin Right EB on-ramp	✹	✹	✹	✹	✹	◉
5 lane Baldwin Left EB on ramp	✹	✹	○	✹	✹	◉
Transportation Systems Management*	○	○	○	○	○	◉
New Grand River Crossing near Burton St.	◉	○	○	◉	◉	○
Surface Road RR Grade Separation	○	○	◉	◉	◉	○
Non freeway/White Street Alternative	○	○	○	◉	◉	○

✹ Completely addresses purpose and need criteria
◉ Partially addresses purpose and need criteria
○ Does not address purpose and need criteria
* TSM includes minor operational improvements on the existing transportation system, such as adding turning lanes or changing signal timing.

1.4 PREFERED ALTERNATIVE

Build Alternative: The Build Alternative includes (See Exhibits 1.4A, 1.4B and 1.4C – Preferred Alternative): Two additional ramps, WB off and EB on, connecting I-196 directly with Baldwin Street, just north of Chicago Drive. The two new ramps will connect with the existing WB off and EB on-ramps utilizing the weave/merge lane on I-196 WB, and constructing a new weave/merge lane along I-196 EB, all located between M-11 (28th Street) interchange and the Chicago Drive interchange. These ramps and mainline traffic operations were previously analyzed by MDOT and approved by FHWA in a "Request for Additional I-196 Access" report in 2000. The new EB on-ramp and WB off-ramp will be located under the I-196 mainline, along and north of the CSX rail line, requiring replacement of two freeway mainline bridges over the rail line.

This project provides access from the I-196 freeway to the Jenison area without crossing the rail line, as required by the current Chicago Drive ramps. This will reduce travel restrictions and delays, improve emergency service access, enhance freeway traffic flow and safety, and provide additional capacity to address projected traffic growth in the area, as noted in the Purpose and Need.

The two new ramps join together just east of Rush Creek and a new single span bridge will be constructed over the creek. At the new Rush Creek bridge, there are two EB lanes and one WB lane, widening to two WB lanes at the relocated Grandville wastewater treatment plant entrance and non-motorized trail head parking area. The limited access designation for the new ramps and MDOT jurisdiction ends at this point. From the new treatment plant entrance, west to the Main Street intersection, the ramps become Baldwin Street and under the jurisdiction of the Ottawa County Road Commission.

The existing Baldwin Street section will be realigned and widened from 2-lanes to 5 lanes up to the Main Street intersection (See Exhibit 1.5) Other typical cross-sections for the Preferred Alternative can be found in Appendix C (See Exhibits C-1 to C-4). A sidewalk will be provided on the north side, terminating at the treatment plant service drive as requested by the township. On the south side of Baldwin Street, adjacent to the church at Main Street, only the existing sidewalk will be replaced. At the Main Street intersection, Baldwin Street is 5 lanes on both sides of Main Street, plus an additional EB to SB right-turn lane to Main Street; and Main Street is changed to a "T" intersection at Baldwin Street, with a traffic signal installed. The Main Street leg of the intersection is shifted slightly and remains a 4-lane section.

The entrance to the Grandville wastewater treatment plant will be relocated from Old Chicago Drive to the new location indicated, north of and parallel to Baldwin Street. It will connect to Baldwin Street, just west of Rush Creek. This new entrance and connecting service drive will include a new crossing of Rush Creek, and the closing of two vehicular at-grade railroad crossings on Old Chicago Drive, as well as the existing service drive into the plant. The service drive bridge will be a single span over Rush Creek. The bridge and service drive will be 43 feet wide (including bridge barrier and railings) to accommodate two travel lanes and non-motorized traffic lanes.

New sidewalks will be constructed along the north side of Baldwin Street, terminating at the treatment plant service drive per Georgetown Township request. The existing sidewalk on the south side of Baldwin Street, adjacent to the church at Main Street, will be replaced based on discussions with township and church officials.

The non-motorized trail in Grandville will be connected to a trailhead parking area on the east side of the entrance to the wastewater treatment facility. Access to this parking area will be provided by the new service drive into the wastewater treatment plant. This service drive will also include the reconfiguration and improvement of the truck parking area and existing trail-head parking area, as part of this project. Access for future trail construction by the city of Grandville will be accommodated at the replaced I-196 bridges over Buck Creek and connect to the local city trail system, pending completion of future Grandville trail plans beyond this area. Actual trail construction is beyond the scope of this project and will be a local responsibility. Old Chicago Drive will be terminated with a cul-de-sac as shown in Exhibit 1.4A. The existing Old Chicago Drive (Old M-21) bridge over Rush Creek, associated roadway and driveway to the waste water treatment facility will be removed. This area will be restored back to the natural floodplain elevation in order to serve as on-site floodplain mitigation.

Preferred Alternative: The Build Alternative as described above is the Preferred Alternative. The alternative addresses the immediate and future access, capacity, and operational needs of the I-196 Chicago Drive interchange. This modification will include direct eastbound (EB)-on and westbound (WB)-off freeway access between I-196 and Baldwin Street. These new ramps will provide freeway access to Georgetown Township without the at-grade crossing of the CSX rail-line. Baldwin Street will be extended to connect with the new ramps, and improved between Main Street and the new ramps to accommodate the additional traffic.